

FILE 'HOME' ENTERED AT 12:23:52 ON 11 AUG 2005

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)

FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER, PASCAL, BIOTECHNO, ESBIODBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005

L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5
L7 3 S (EXPRESS? (S) HOST)(S) L5
L8 13 S COLI (S) L5

=> index bioscience medicine

FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS

SINCE FILE TOTAL

ENTRY SESSION

FULL ESTIMATED COST

0.21 0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOBUSINESS, BIOCOMMERCE, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, ...' ENTERED AT 12:24:09 ON 11 AUG 2005

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=> s ((hydroperoxide (w) lyase) or HL or HPL)

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14 FILE ADISNEWS
539 FILE AGRICOLA
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51 FILE ANTE
34 FILE AQUALINE
268 FILE AQUASCI
383 FILE BIOBUSINESS
27 FILE BIOCOMMERCE
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1135 FILE BIOTECHDS
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 2899 FILE NLDB

74 FILES HAVE ONE OR MORE ANSWERS, 77 FILES SEARCHED IN STNINDEX

L1 QUE ((HYDROPEROXIDE (W) LY ASE) OR HL OR HPL)

=> d rank

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 F6 14417 EMBASE
 F7 13143 GENBANK
 F8 12481 TOXCENTER
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 F10 9381 PROMT
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 F12 5349 BIOTECHNO
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 F14 4950 ESBIODASE
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 F23 1903 FSTA
 F24 1656 DGENE
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 F27 1463 WPIDS

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| F30 | 1135 | BIOTECHDS |
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| F37 | 364 | NTIS |
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| F41 | 268 | AQUASCI |
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| F64 | 17 | IMSDRUGNEWS |
| F65 | 16 | IMSRESEARCH |
| F66 | 14 | ADISNEWS |
| F67 | 12 | KOSMET |
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| F69 | 5 | PHIC |
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| F71 | 3 | CROPB |
| F72 | 3 | SYNTHLINE |
| F73 | 1 | CEN |
| F74 | 1 | FOREGE |

=> file f1-f6, f8, f9, f12,, f14, f17

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=> s l1
L2 153052 L1

=> s (gene# or sequence# or clone# or polynucleotide# or recombinant#) (s) l2
3 FILES SEARCHED...
7 FILES SEARCHED...
10 FILES SEARCHED...
L3 16934 (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINANT#
) (S) L2

=> s lyase (s) l3
L4 373 LYASE (S) L3

=> s plant# (s) l4
L5 120 PLANT# (S) L4

=> s watermelon# (s) l5
L6 5 WATERMELON# (S) L5

=> d ibib abs l6 1-5

L6 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:453850 CAPLUS
DOCUMENT NUMBER: 142:480905
TITLE: Recombinant watermelon (Citrullus lanatus)
hydroperoxide lyase and use for production of fatty
acid aldehydes
INVENTOR(S): Hildebrand, David; Fukushige, Hirotada
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|------------|
| US 2005114921 | A1 | 20050526 | US 2003-718265 | 20031121 |
| PRIORITY APPLN. INFO.: | | | US 2003-718265 | 20031121 ✓ |
| AB Recombinant watermelon (<i>Citrullus lanatus</i>)hydroperoxide lyase protein, DNA sequences encoding the protein, vectors contg. the DNA sequences and hosts contg. the vectors are provided, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts. | | | | |

L6 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2005:147874 CAPLUS
DOCUMENT NUMBER: 142:405219
TITLE: Watermelon (Citrullus lanatus) Hydroperoxide Lyase
Greatly Increases C6 Aldehyde Formation in Transgenic
Leaves

AUTHOR(S): Fukushima, Hirotada; Hildebrand, David F.
CORPORATE SOURCE: Department of Agronomy, University of Kentucky,
Lexington, KY, 40546-0312, USA
SOURCE: Journal of Agricultural and Food Chemistry (2005), ✓
53(6), 2046-2051
CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fatty acid hydroperoxide lyase (HL) is the key enzyme for the prodn. of the "green note" compds., leaf aldehyde [(2E)-hexenal] and leaf alc. [(3Z)-hexenol], in plant tissues. A cDNA encoding HL was cloned from leaves of watermelon (*Citrullus lanatus*) and expressed in *Nicotiana tabacum*. The enzyme is 3 times more active with 13-hydroperoxylinolenic acid than with 13-hydroperoxylinoic acid. The activity against 9-hydroperoxides of polyunsatd. fatty acids is minimal. Enzyme activity of the watermelon HL in the transgenic leaves was .apprx.50 times higher than endogenous HL activity in the wild-type *N. tabacum* plants. When compared with *Arabidopsis* HL also expressed in *N. tabacum*, the highest HL activity is 10 times higher in watermelon HL overexpressing leaves than in *Arabidopsis* HL overexpressers.

REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 5 USPATFULL on STN

ACCESSION NUMBER: 2005:133451 USPATFULL

TITLE: Recombinant watermelon (*Citrullus lanatus*)

hydroperoxide lyase and uses thereof

INVENTOR(S): Hildebrand, David, Lexington, KY, UNITED STATES

Fukushige, Hirotada, Lexington, KY, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2005114921 A1 20050526

APPLICATION INFO.: US 2003-718265 A1 20031121 (10)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: MCDERMOTT, WILL & EMERY, 600 13th Street, N.W.,
Washington, DC, 20005-3096, US

NUMBER OF CLAIMS: 13

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 5 Drawing Page(s)

LINE COUNT: 596

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Recombinant watermelon (*Citrullus lanatus*)hydroperoxide lyase protein, DNA sequences encoding the protein, vectors containing the DNA sequences and hosts containing the vectors are provided, together with methods for recombinantly producing watermelon hydroperoxide lyase, DNA sequences, vectors and hosts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2005-0170967 PASCAL

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TITLE (IN ENGLISH): Watermelon (*Citrullus lanatus*) hydroperoxide lyase greatly increases C.sub.6 aldehyde formation in transgenic leaves

AUTHOR: FUKUSHIGE Hirotada; HILDEBRAND David F.

CORPORATE SOURCE: Department of Agronomy, University of Kentucky, 1405 Veterans Drive, Lexington, Kentucky 40546-0312, United States

SOURCE: Journal of agricultural and food chemistry : (Print), (2005), 53(6), 2046-2051, 49 refs.

ISSN: 0021-8561 CODEN: JAFCAU

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States

LANGUAGE: English
 AVAILABILITY: INIST-7332, 354000126940230320
 AN 2005-0170967 PASCAL
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 AB Fatty acid ***hydroperoxide*** ***lyase*** (***HL***) is the key enzyme for the production of the "green note" compounds, leaf aldehyde [(2E)-hexenal] and leaf alcohol [(3Z)-hexenol], in ***plant*** tissues. A cDNA encoding ***HL*** was ***cloned*** from leaves of ***watermelon*** (Citrullus lanatus) and expressed in Nicotiana tabacum. The enzyme is 3 times more active with 13-hydroperoxylinolenic acid than with 13-hydroperoxylinoleic acid. The activity against 9-hydroperoxides of polyunsaturated fatty acids is minimal. Enzyme activity of the ***watermelon*** ***HL*** in the transgenic leaves was .eqv. 50 times higher than endogenous ***HL*** activity in the wild-type N. tabacum ***plants***. When compared with Arabidopsis ***HL*** also expressed in N. tabacum, the highest ***HL*** activity is 10 times higher in ***watermelon*** ***HL*** overexpressing leaves than in Arabidopsis ***HL*** overexpressers.

L6 ANSWER 5 OF 5 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 1996-0004476 PASCAL
 COPYRIGHT NOTICE: Copyright .COPYRGT. 1996 INIST-CNRS. All rights reserved.
 TITLE (IN ENGLISH): Glyoxysomal malate dehydrogenase and malate synthase from soybean cotyledons (Glycine max L.) : enzyme association, antibody production and cDNA cloning
 AUTHOR: GUEX N.; HENRY H.; FLACH J.; RICHTER H.; WIDMER F.
 CORPORATE SOURCE: Inst. plant biology physiology Univ., 1015 Lausanne, Switzerland
 SOURCE: Planta, (1995), 197(2), 369-375, refs. 1 p.1/4
 ISSN: 0032-0935 CODEN: PLANAB
 DOCUMENT TYPE: Journal
 BIBLIOGRAPHIC LEVEL: Analytic
 COUNTRY: Germany, Federal Republic of
 LANGUAGE: English
 AVAILABILITY: INIST-916, 354000058511430210

AN 1996-0004476 PASCAL
 CP Copyright .COPYRGT. 1996 INIST-CNRS. All rights reserved.
 AB In order to investigate a possible association between soybean malate synthase (MS ; L-malate glyoxylate- ***lyase*** , CoA-acetylating, EC 4.1.3.2) and glyoxysomal malate dehydrogenase (gMDH ; (S)-malate : NAD^{sup.} + oxidoreductase, EC 1.1.1.37), two consecutive enzymes in the glyoxylate cycle, their elution profiles were analyzed on Superdex 200 HR fast protein liquid chromatography columns equilibrated in low- and high-ionic-strength buffers. Starting with soluble proteins extracted from the cotyledons of 5-d-old soybean seedlings and a 45% ammonium sulfate precipitation, MS and gMDH coeluted on Superdex 200 HR (low-ionic-strength buffer) as a complex with an approximate relative molecular mass (M_{sub.r}) of 670000. Dissociation was achieved in the presence of 50 mM KCl and 5 mM MgCl_{sub.2}, with the elution of MS as an octamer of M_{sub.r} 510 000 and of gMDH as a dimer of M_{sub.r} 73 000. Polyclonal antibodies raised to the native copurified enzymes recognized both denatured MS and gMDH on immunoblots, and their native forms after gel filtration. When these antibodies were used to screen a .lambda. ZAP II expression library containing cDNA from 3-d-old soybean cotyledons, they identified seven ***clones*** encoding gMDH, whereas ten ***clones*** encoding MS were identified using an antibody to SDS-PAGE-purified MS. Of these cDNA ***clones*** a 1.8 kb ***clone*** for MS and a 1.3-kb ***clone*** for gMDH were fully ***sequenced***. While 88% identity was found between mature soybean gMDH and ***watermelon*** gMDH, the N-terminal transit peptides showed only 37% identity. Despite this low identity, the soybean gMDH transit peptide conserves the consensus R(X_{sub.6}) ***HL*** motif also found in ***plant*** and mammalian thiolases.

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)

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PASCAL, BIOTECHNO, ESBIOBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005

L2 153052 S L1
L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
L4 373 S LYASE (S) L3
L5 120 S PLANT# (S) L4
L6 5 S WATERMELON# (S) L5

=> s (express? (s) host)(s) l5

9 FILES SEARCHED...

L7 3 (EXPRESS? (S) HOST)(S) L5

=> d ibib abs l7 1-3

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:36652 CAPLUS

DOCUMENT NUMBER: 140:90926

TITLE: Manufacture of conjugated linoleic acid in plants
expressing bacterial genes for linoleic acid isomerase

INVENTOR(S): Renz, Andreas; Gipmans, Martijn; Feussner, Ivo;
Krueger, Claudia; Hornung, Ellen

PATENT ASSIGNEE(S): BASF Plant Science GmbH, Germany

SOURCE: Ger. Offen., 60 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|------------------|----------|
| DE 10229978 | A1 | 20040115 | DE 2002-10229978 | 20020703 |
| WO 2004005442 | A1 | 20040115 | WO 2003-EP6833 | 20030627 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| PRIORITY APPLN. INFO.: DE 2002-10229978 A 20020703 DE 2003-10308850 A 20030227 | | | | |

AB Plants expressing microbial genes for linoleic acid isomerase are described for use in the manuf. of conjugated linoleic acids (trans-11-cis-9-octadecadienoic acid or trans-10-cis-12-octadecadienoic acid) for use in food supplements, e.g. in infant formula. The genes may be modified to improve levels of expression in plants, e.g. by changing the Kozak sequence or by altering codon usage. nces, nucleic acid constructs and/or vectors. In addn. the invention concerns fatty acid mixts. as well as triglycerides with a higher content of conjugated linoleic acid and their use. Cloning of the linoleic acid isomerase gene of *Propionibacterium acnes* and its expression in *Saccharomyces cerevisiae* is demonstrated. Yeast expressing the gene showed a clear peak of conjugated linoleic acid upon gas chromatog. after growth on linoleic acid-contg. medium. Content of conjugated linoleic acid was in the range 2-6.4% of total fatty acids.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:938861 CAPLUS

DOCUMENT NUMBER: 140:1595

TITLE: Transgenic plant expressing Capsicum and Arabidopsis
hydroperoxide lyase gene for plant pest resistance

INVENTOR(S): Takabayashi, Junji; Nishioka, Takaaki; Matsui, Kenji;
Arimura, Genichiro; Ozawa, Rika; Shiojiri, Kaori

PATENT ASSIGNEE(S): Kyoto University, Japan

SOURCE: Jpn. Kokai Tokyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|----------|
| JP 2003339260 | A2 | 20031202 | JP 2002-153094 | 20020527 |
| PRIORITY APPLN. INFO.: | | | JP 2002-153094 | 20020527 |

AB The present invention provides transgenic plant transformed with Capsicum and Arabidopsis hydroperoxide lyase (HPL) gene. The invention also provides cDNA sequences of hydroperoxide lyase Capsicum annuum and Arabidopsis thaliana. The plant expressing sense Capsicum hydroperoxide lyase gene can be used to capture pests by releasing volatile material into air to attract the pests. The plant expressing antisense Arabidopsis hydroperoxide lyase gene can be used for pest resistance by accumulating the pest toxin compd., isothiocyanate.

L7 ANSWER 3 OF 3 USPATFULL on STN
ACCESSION NUMBER: 2004:14299 USPATFULL
TITLE: Hydroperoxyde lyases
INVENTOR(S): McGonigle, Brian, Wilmington, DE, UNITED STATES

| NUMBER | KIND | DATE |
|---------------------|----------------|------------------|
| PATENT INFORMATION: | US 2004010822 | A1 20040115 |
| APPLICATION INFO.: | US 2003-434991 | A1 20030509 (10) |

| NUMBER | DATE |
|--|--|
| PRIORITY INFORMATION: | US 2002-379424P 20020510 (60) |
| DOCUMENT TYPE: | Utility |
| FILE SEGMENT: | APPLICATION |
| LEGAL REPRESENTATIVE: | E I DU PONT DE NEMOURS AND COMPANY, LEGAL PATENT RECORDS CENTER, BARLEY MILL PLAZA 25/1128, 4417 LANCASTER PIKE, WILMINGTON, DE, 19805 |
| NUMBER OF CLAIMS: | 22 |
| EXEMPLARY CLAIM: | 1 |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) |
| LINE COUNT: | 2225 |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | |

AB This invention relates to isolated nucleic acid fragments encoding a hydroperoxide lyases, more specifically soybean (Glycine max) hydroperoxide lyases. The invention also relates to the construction of a recombinant DNA construct encoding all or a portion of a hydroperoxide lyase of the present invention, in sense or antisense orientation, wherein expression of the recombinant DNA construct results in production of altered levels of hydroperoxide lyase in a transformed host cell.

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)

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| L4 | 373 S LYASE (S) L3 |
| L5 | 120 S PLANT# (S) L4 |
| L6 | 5 S WATERMELON# (S) L5 |
| L7 | 3 S (EXPRESS? (S) HOST)(S) L5 |

=> s coli (s) l5

L8 13 COLI (S) L5

=> d ibib abs l8 1-13

L8 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:466946 CAPLUS
DOCUMENT NUMBER: 133:234386

TITLE: Fatty acid hydroperoxide lyase in tomato fruits:
cloning and properties of a recombinant enzyme
expressed in Escherichia coli

AUTHOR(S): Matsui, Kenji; Miyahara, Chinatsu; Wilkinson, Jack;
Hiatt, Bill; Knauf, Vic; Kajiwara, Tadahiko

CORPORATE SOURCE: Department of Biological Chemistry, Faculty of
Agriculture, Yamaguchi University, Yamaguchi,
753-8515, Japan

SOURCE: Bioscience, Biotechnology, and Biochemistry (2000),
64(6), 1189-1196
CODEN: BBBIEJ; ISSN: 0916-8451

PUBLISHER: Japan Society for Bioscience, Biotechnology, and
Agrochemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Fatty acid hydroperoxide lyase (HPL) is a member of a novel subfamily of
cytochrome P 450 and catalyzes a cleavage reaction of fatty acid
hydroperoxides to form short-chain aldehydes and oxo-acids. A cDNA
encoding tomato fruit HPL (LeHPL) was obtained. An active LeHPL was
expressed in E. coli and purified. It showed highest activity against the
13-hydroperoxide of linolenic acid, followed by that of linoleic acid.
9-Hydroperoxides were poor substrates. The absorption spectrum of the
purified LeHPL in the native form was similar to that of most P450s
although a CO-adduct having a λ_{max} at 450 nm could not be obtained.
LeHPL activity is reversibly inhibited by nordihydroguaiaretic acid, while
salicylic acid irreversibly inhibited it. LeHPL is kinetically
inactivated by fatty acid hydroperoxides, esp. 9-hydroperoxides. The
inactivation is prevented by inhibitors of LeHPL. Thus, HPL catalytic
activity is thought to be essential to its inactivation. During the
inactivation, an abolition of the Soret band was evident, indicating that
inactivation is caused mainly by degradn. of the prosthetic heme in LeHPL.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:15393 CAPLUS

DOCUMENT NUMBER: 132:74528

TITLE: Fatty acid hydroperoxide lyase, nucleic acid
sequences, expression constructs, and transgenic
plants with modified traits

INVENTOR(S): Matsui, Kenji

PATENT ASSIGNEE(S): Calgene Llc, USA

SOURCE: PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| WO 2000000627 | A2 | 20000106 | WO 1999-US14777 | 19990625 |
| WO 2000000627 | A3 | 20000706 | | |
| W: CA, CN, JP, KR, MX, US | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| CA 2301856 | AA | 20000106 | CA 1999-2301856 | 19990625 |
| EP 1032694 | A2 | 20000906 | EP 1999-930829 | 19990625 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI | | | | |

PRIORITY APPLN. INFO.: US 1998-90924P P 19980626

US 1999-121965P P 19990226

WO 1999-US14777 W 19990625

AB Polynucleotides and polypeptide sequences for plant hydroperoxide (HPO)
lyase, in particular 13-HPO lyase and 9-HPO lyase from Arabidopsis,
tomato, and cucumber are presented. Recombinant DNA constructs useful for
the expression of a plant HPO lyase in a plant, microbial, or yeast cell
are described. Furthermore, DNA constructs useful for the antisense
expression of a plant HPO lyase in a plant cell are described. Such
constructs will contain a DNA sequence encoding the plant HPO lyase of

interest under the control of regulatory elements capable of preferentially directing the expression of the plant HPO lyase in plant tissue, when such a construct is expressed in a transgenic plant. This invention also relates to methods of using a DNA sequence encoding a plant HPO lyase for the modification of the volatile aldehydes in plant tissues, as well as for methods of increasing disease resistance in a plant

L8 ANSWER 3 OF 13 USPATFULL on STN

ACCESSION NUMBER: 2005:133451 USPATFULL

TITLE: Recombinant watermelon (Citrullus lanatus)

hydroperoxide lyase and uses thereof

INVENTOR(S): Hildebrand, David, Lexington, KY, UNITED STATES

Fukushige, Hirotada, Lexington, KY, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2005114921 A1 20050526

APPLICATION INFO.: US 2003-718265 A1 20031121 (10)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: MCDERMOTT, WILL & EMERY, 600 13th Street, N.W.,
Washington, DC, 20005-3096, US

NUMBER OF CLAIMS: 13

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 5 Drawing Page(s)

LINE COUNT: 596

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Recombinant watermelon (Citrullus lanatus)hydroperoxide lyase protein,
DNA sequences encoding the protein, vectors containing the DNA sequences
and hosts containing the vectors are provided, together with methods for
recombinantly producing watermelon hydroperoxide lyase, DNA sequences,
vectors and hosts.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 4 OF 13 PASCAL COPYRIGHT 2005 INIST-CNRS. ALL RIGHTS RESERVED.

on STN

ACCESSION NUMBER: 2000-0353322 PASCAL

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reserved.

TITLE (IN ENGLISH): Cytochrome P450-dependent metabolism of oxylipins in
tomato. Cloning and expression of allene oxide
synthase and fatty acid hydroperoxide lyase

AUTHOR: HOWE G. A.; GYU IN LEE; ITOH A.; LEI LI; DEROCHER A.
E.

CORPORATE SOURCE: Department of Energy-Plant Research Laboratory,
Michigan State University, East Lansing, Michigan
48824, United States; Department of Biochemistry,
Michigan State University, East Lansing, Michigan
48824, United States

SOURCE: Plant physiology : (Bethesda), (2000), 123(2),
711-724, refs. 2 p.1/4

ISSN: 0032-0889 CODEN: PPHYA5

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States

LANGUAGE: English

AVAILABILITY: INIST-3000, 354000088794140300

AN 2000-0353322 PASCAL

CP Copyright .COPYRGT. 2000 INIST-CNRS. All rights reserved.

AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide***

lyase (***HPL***) are ***plant*** -specific cytochrome

P450s that commit fatty acid hydroperoxides to different branches of
oxylipin metabolism. Here we report the cloning and characterization of
AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (Lycopersicon
esculentum). Functional expression of the cDNAs in Escherichia

coli showed that LeAOS and LeHPL encode enzymes that metabolize

13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids.

LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-
octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-

octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatol, respectively. LeAOS expression was detected in all organs of the ***plant***. In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes***, with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes***. These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes***.

L8 ANSWER 5 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2003:36324579 BIOTECHNO

TITLE: Optimisation of expression and immobilized metal ion
affinity chromatographic purification of recombinant
(His).sub.6-tagged cytochrome P450 hydroperoxide lyase
in Escherichia coli

AUTHOR: Delcarte J.; Fauconnier M.-L.; Jacques P.; Matsui K.;
Thonart P.; Marlier M.

CORPORATE SOURCE: J. Delcarte, Agricultural Research Centre, Chaussee de
Namur 146, 5030 Gembloux, Belgium.
E-mail: delcarte@cragx.fgov.be

SOURCE: Journal of Chromatography B: Analytical Technologies
in the Biomedical and Life Sciences, (25 MAR 2003),
786/1-2 (229-236), 15 reference(s)
CODEN: JCBAAI ISSN: 1570-0232

DOCUMENT TYPE: Journal; Conference Article

COUNTRY: Netherlands

LANGUAGE: English

SUMMARY LANGUAGE: English

AN 2003:36324579 BIOTECHNO

AB Fatty acid ***hydroperoxide*** ***lyase*** (***HPL***) is a
cytochrome P450 acting on fatty acid's hydroperoxides in many
plants. The optimisation of the expression of ***recombinant***
(His).sub.6-tagged ***HPL*** in Escherichia ***coli*** is
described: the highest ***HPL*** production yield were obtained with
TB medium supplemented with 2.5 mM .delta.-aminolevulinic acid and 0.5 mM
IPTG. For the first time, the time course expression of a ***plant***
P450 in a bench-scale fermentor is detailed and the amount of
recombinant ***HPL*** production is 16.3 mg/l. The UV-Visible
spectrum of the ***recombinant*** (His).sub.6-tagged ***HPL***
have been recorded after a Ni.sup.2.sup.-based affinity chromatography
(IMAC). .COPYRGT. 2002 Elsevier Science B.V. All rights reserved.

L8 ANSWER 6 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN
ACCESSION NUMBER: 2001:32989319 BIOTECHNO

TITLE: Biogenesis of volatile aldehydes from fatty acid
hydroperoxides: Molecular cloning of a hydroperoxide
lyase (CYP74C) with specificity for both the 9- and
13-hydroperoxides of linoleic and linolenic acids

AUTHOR: Tijet N.; Schneider C.; Muller B.L.; Brash A.R.

CORPORATE SOURCE: A.R. Brash, Department of Pharmacology, Vanderbilt
University Medical School, Nashville, TN 37232, United
States.

E-mail: alan.brash@mcmail.vanderbilt.edu

SOURCE: Archives of Biochemistry and Biophysics, (15 FEB
2001), 386/2 (281-289), 36 reference(s)
CODEN: ABBIA4 ISSN: 0003-9861

DOCUMENT TYPE: Journal; Article

COUNTRY: United States

LANGUAGE: English

SUMMARY LANGUAGE: English

AN 2001:32989319 BIOTECHNO

AB A novel member of the ***plant*** cytochrome P450 CYP74 family of
fatty acid hydroperoxide metabolizing enzymes has been ***cloned***
from melon fruit (Cucumis melo). The cDNA is comprised of 1446
nucleotides encoding a protein of 481 amino acids. The homology at the

amino acid level to other members of the CYP74 family is 35-50%, the closest relatives being allene oxide synthases. The cDNA was expressed in *Escherichia coli*, and the corresponding protein was purified by affinity column chromatography. The native enzyme showed a main Soret band at 418 nm, indicative of a low spin ferric cytochrome P450, and a 447-nm peak appeared in the CO-difference spectrum. Using [¹⁴C]-radiolabeled substrate, HPLC, UV, and GC-MS, the products of conversion of 9S-hydroperoxy-linoleic acid were identified as 9-oxo-nonanoic acid and 3Z-non-enal. Kinetic analysis of this hydroperoxide lyase showed the highest rate of reaction with 9-hydroperoxy-linolenic acid followed by 9-hydroperoxy-linoleic acid and then the corresponding 13-hydroperoxides. Overall, the newly characterized cytochrome P450 enzyme is a fatty acid hydroperoxide lyase with a preference, but not absolute specificity for the 9-positional hydroperoxides of linoleic and linolenic acids. COPYRIGHT. 2001 Academic Press.

L8 ANSWER 7 OF 13 BIOTECHNO COPYRIGHT 2005 Elsevier Science B.V. on STN

ACCESSION NUMBER: 2000:30411156 BIOTECHNO

TITLE: Cytochrome P450-dependent metabolism of oxylipins in tomato. Cloning and expression of allene oxide synthase and fatty acid hydroperoxide lyase

AUTHOR: Howe G.A.; Gyu In Lee; Itoh A.; Li L.; DeRocher A.E.

CORPORATE SOURCE: G.A. Howe, Department of Biochemistry, Michigan State University, East Lansing, MI 48824, United States.
E-mail: howeg@msu.edu

SOURCE: Plant Physiology, (2000), 123/2 (711-724), 71 reference(s)

CODEN: PLPHAY ISSN: 0032-0889

DOCUMENT TYPE: Journal; Article

COUNTRY: United States

LANGUAGE: English

SUMMARY LANGUAGE: English

AN 2000:30411156 BIOTECHNO

AB Allene oxide synthase (AOS) and fatty acid hydroperoxide lyase (HPL) are plant-specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and HPL (LeHPL) cDNAs from tomato (*Lycopersicon esculentum*). Functional expression of the cDNAs in *Escherichia coli* showed that LeAOS and LeHPL encode enzymes that metabolize 13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids. LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatol, respectively. LeAOS expression was detected in all organs of the plant. In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both genes, with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor genes. These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive genes.

L8 ANSWER 8 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN

ACCESSION NUMBER: 2004002443 ESBIOBASE

TITLE: Kinetics of Barley FA Hydroperoxide Lyase Are Modulated by Salts and Detergents

AUTHOR: Koeduka T.; Stumpe M.; Matsui K.; Kajiwaru T.; Feussner I.

CORPORATE SOURCE: K. Matsui, Department of Biological Chemistry, Faculty of Agriculture, Yamaguchi University, Yoshida 1677-1, Yamaguchi, 753-8515, Japan.
E-mail: matsui@yamaguchi-u.ac.jp

SOURCE: Lipids, (2003), 38/11 (1167-1172), 29 reference(s)

CODEN: LPDSAP ISSN: 0024-4201

DOCUMENT TYPE: Journal; Article

COUNTRY: United States

LANGUAGE: English

SUMMARY LANGUAGE: English

AB The cDNA from barley coding FA ***hydroperoxide*** ***lyase*** (***HPL***) was ***cloned***. A ***recombinant*** protein derived from the cDNA was expressed in Escherichia ***coli*** as an active enzyme. Thus far, there have been no reports on ***HPL*** in monocotyledonous ***plants***. The ***recombinant*** protein was shown to be most active to linolenic acid 13-hydroperoxide, followed by linoleic acid 13-hydroperoxide. 9-Hydroperoxides of the FA could not be substrates for the ***recombinant*** ***HPL***. The activity was dramatically enhanced in the presence of a detergent and/or a salt in the reaction mixture. At the same time, the kinetics of the reaction, including inactivation and the V.sub.m.sub.a.sub.x value of the ***HPL***, were also greatly modulated, depending on the concentration of a monovalent cation and/or a detergent in the reaction mixture. These results suggest that these effectors induced a conformational change in barley ***HPL***, resulting in an improvement in substrate binding and in enzyme activity.

L8 ANSWER 9 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN

ACCESSION NUMBER: 2003073028 ESBIODASE

TITLE: Optimisation of expression and immobilized metal ion affinity chromatographic purification of recombinant (His).sub.6-tagged cytochrome P450 hydroperoxide lyase in Escherichia coli

AUTHOR: Delcarte J.; Fauconnier M.-L.; Jacques P.; Matsui K.; Thonart P.; Marlier M.

CORPORATE SOURCE: J. Delcarte, Agricultural Research Centre, Chaussee de Namur 146, 5030 Gembloux, Belgium.
E-mail: delcarte@cragx.fgov.be

SOURCE: Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, (25 MAR 2003), 786/1-2 (229-236), 15 reference(s)
CODEN: JCBAAI ISSN: 1570-0232

DOCUMENT TYPE: Journal; Conference Article

COUNTRY: Netherlands

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Fatty acid ***hydroperoxide*** ***lyase*** (***HPL***) is a cytochrome P450 acting on fatty acid's hydroperoxides in many ***plants***. The optimisation of the expression of ***recombinant*** (His).sub.6-tagged ***HPL*** in Escherichia ***coli*** is described: the highest ***HPL*** production yield were obtained with TB medium supplemented with 2.5 mM .delta.-aminolevulinic acid and 0.5 mM IPTG. For the first time, the time course expression of a ***plant*** P450 in a bench-scale fermentor is detailed and the amount of ***recombinant*** ***HPL*** production is 16.3 mg/l. The UV-Visible spectrum of the ***recombinant*** (His).sub.6-tagged ***HPL*** have been recorded after a Ni.sup.2.sup.-based affinity chromatography (IMAC). .COPYRGT. 2002 Elsevier Science B.V. All rights reserved.

L8 ANSWER 10 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V. on STN

ACCESSION NUMBER: 2001241169 ESBIODASE

TITLE: Biogenesis of volatile aldehydes from fatty acid hydroperoxides: Molecular cloning of a hydroperoxide lyase (CYP74C) with specificity for both the 9- and 13-hydroperoxides of linoleic and linolenic acids

AUTHOR: Tijet N.; Schneider C.; Muller B.L.; Brash A.R.

CORPORATE SOURCE: A.R. Brash, Department of Pharmacology, Vanderbilt University Medical School, Nashville, TN 37232, United States.
E-mail: alan.brash@mcmail.vanderbilt.edu

SOURCE: Archives of Biochemistry and Biophysics, (15 FEB 2001), 386/2 (281-289), 36 reference(s)
CODEN: ABBIA4 ISSN: 0003-9861

DOCUMENT TYPE: Journal; Article

COUNTRY: United States

LANGUAGE: English

SUMMARY LANGUAGE: English

AB A novel member of the ***plant*** cytochrome P450 CYP74 family of fatty acid hydroperoxide metabolizing enzymes has been ***cloned*** from melon fruit (*Cucumis melo*). The cDNA is comprised of 1446 nucleotides encoding a protein of 481 amino acids. The homology at the amino acid level to other members of the CYP74 family is 35-50%, the closest relatives being allene oxide synthases. The cDNA was expressed in *Escherichia coli****, and the corresponding protein was purified by affinity column chromatography. The native enzyme showed a main Soret band at 418 nm, indicative of a low spin ferric cytochrome P450, and a 447-nm peak appeared in the CO-difference spectrum. Using [U-¹⁴C]radiolabeled substrate, HPLC, UV, and GC-MS, the products of conversion of 9S-hydroperoxy-linoleic acid were identified as 9-oxo-nonanoic acid and 3Z-non-enal. Kinetic analysis of this ***hydroperoxide*** ***lyase*** showed the highest rate of reaction with 9-hydroperoxy-linolenic acid followed by 9-hydroperoxy-linoleic acid and then the corresponding 13-hydroperoxides. Overall, the newly characterized cytochrome P450 enzyme is a fatty acid ***hydroperoxide*** ***lyase*** with a preference, but not absolute specificity for the 9-positional hydroperoxides of linoleic and linolenic acids. .COPYRG.T. 2001 Academic Press.

L8 ANSWER 11 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

ACCESSION NUMBER: 2000145683 ESBIODASE

TITLE: Cytochrome P450-dependent metabolism of oxylipins in tomato. Cloning and expression of allene oxide synthase and fatty acid hydroperoxide lyase

AUTHOR: Howe G.A.; Gyu In Lee; Itoh A.; Li L.; DeRocher A.E.

CORPORATE SOURCE: G.A. Howe, Department of Biochemistry, Michigan State University, East Lansing, MI 48824, United States.
E-mail: howeg@msu.edu

SOURCE: Plant Physiology, (2000), 123/2 (711-724), 71
reference(s)

CODEN: PLPHAY ISSN: 0032-0889

DOCUMENT TYPE: Journal; Article

COUNTRY: United States

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** (***HPL***) are ***plant*** -specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (*Lycopersicon esculentum*). Functional expression of the cDNAs in *Escherichia coli**** showed that LeAOS and LeHPL encode enzymes that metabolize 13- but not 9-hydroperoxide derivatives of C.sub.1.sub.8 fatty acids. LeAOS was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatol, respectively. LeAOS expression was detected in all organs of the ***plant***. In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes***, with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes***. These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes***.

L8 ANSWER 12 OF 13 Elsevier BIOBASE COPYRIGHT 2005 Elsevier Science B.V.
on STN

ACCESSION NUMBER: 2000114637 ESBIODASE

TITLE: Characterization of three cloned and expressed

13-hydroperoxide lyase isoenzymes from alfalfa with unusual N-terminal sequences and different enzyme kinetics

AUTHOR: Noordermeer M.A.; Van Dijken A.J.H.; Smeekens S.C.M.; Veldink G.A.; Vliegthart J.F.G.

CORPORATE SOURCE: G.A. Veldink, Bijvoet Ctr. for Biomolec. Research, Department of Bio-organic Chemistry, Utrecht University, Padualaan 8, NL-3584 CH Utrecht, Netherlands.

E-mail: veldink@accu.uu.nl

SOURCE: European Journal of Biochemistry, (2000), 267/9 (2473-2482), 43 reference(s)

CODEN: EJBCAI ISSN: 0014-2956

DOCUMENT TYPE: Journal; Article

COUNTRY: United Kingdom

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Three full-length cDNAs from alfalfa seedlings coding for hydroperoxide lyases were ***cloned*** and expressed in *Escherichia coli* and characterized as cytochrome P450 enzymes. The isoenzymes were specific for 13-hydroperoxy linoleic and linolenic acids and did not use the 9-hydroperoxy isomers as substrates. Because alfalfa contains both specificities, this indicates the presence of two different types of hydroperoxide lyases, each specific for one kind of substrate. The enzymes contain 480 amino acids (54 kDa) and contain an unusual, nonplastidic N-terminal ***sequence*** of 22 amino acids, which strongly reduces the enzyme activity. The only known presequence of a ***hydroperoxide*** ***lyase*** (from *Arabidopsis thaliana*) was considered to be a transit ***sequence***. The reduced enzyme activity, however, indicates that the hydroperoxide lyases with N-terminal extensions could be pro-enzymes. This hypothesis is supported by the fast release of ***hydroperoxide*** ***lyase*** products by ***plants*** upon wounding. One of the isoenzymes showed a strongly decreased V_{max} and K_m compared to the other two. Because this is probably due to the substitution of Ser377 by Phe, the residue at position 377 seems to be important. This is the first time that sufficient quantities of ***hydroperoxide*** ***lyase*** have been obtained for characterization studies, by circumventing difficult purification procedures and degradation of the enzyme. The high expression level, easy purification, good stability and high specificity make these ***cloned*** hydroperoxide lyases excellent tools to study the reaction mechanism and structure. We postulate an integrated reaction mechanism, based on the known chemistry of cytochrome P450 enzymes. This is the first mechanism that unifies all observed features of hydroperoxide lyases.

L8 ANSWER 13 OF 13 LIFESCI COPYRIGHT 2005 CSA on STN

ACCESSION NUMBER: 2000:97764 LIFESCI

TITLE: Cytochrome P450-Dependent Metabolism of Oxylipins in Tomato. Cloning and Expression of Allene Oxide Synthase and Fatty Acid Hydroperoxide Lyase

AUTHOR: Howe, G.A.; Lee, G.I.; Itoh, A.; Li, L.; DeRocher, A.E.

CORPORATE SOURCE: Department of Energy-Plant Research Laboratory and Department of Biochemistry, Michigan State University, East Lansing, Michigan 48824, USA; E-mail: howeg@msu.edu

SOURCE: Plant Physiology [Plant Physiol.], (20000600) vol. 123, no. 2, pp. 711-724. ISSN: 0032-0889.

DOCUMENT TYPE: Journal

FILE SEGMENT: G

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Allene oxide synthase (AOS) and fatty acid ***hydroperoxide*** ***lyase*** (***HPL***) are ***plant***-specific cytochrome P450s that commit fatty acid hydroperoxides to different branches of oxylipin metabolism. Here we report the cloning and characterization of AOS (LeAOS) and ***HPL*** (LeHPL) cDNAs from tomato (*Lycopersicon esculentum*). Functional expression of the cDNAs in *Escherichia coli* showed that LeAOS and LeHPL encode enzymes that metabolize 13- but not 9-hydroperoxide derivatives of C sub(18) fatty acids. LeAOS

was active against both 13S-hydroperoxy-9(Z),11(E),15(Z)-octadecatrienoic acid (13-HPOT) and 13S-hydroperoxy-9(Z),11(E)-octadecadienoic acid, whereas LeHPL showed a strong preference for 13-HPOT. These results suggest a role for LeAOS and LeHPL in the metabolism of 13-HPOT to jasmonic acid and hexenal/traumatin, respectively. LeAOS expression was detected in all organs of the ***plant***. In contrast, LeHPL expression was predominant in leaves and flowers. Damage inflicted to leaves by chewing insect larvae led to an increase in the local and systemic expression of both ***genes***, with LeAOS showing the strongest induction. Wound-induced expression of LeAOS also occurred in the def-1 mutant that is deficient in octadecanoid-based signaling of defensive proteinase inhibitor ***genes***. These results demonstrate that tomato uses genetically distinct signaling pathways for the regulation of different classes of wound responsive ***genes***.

L1 QUE ((HYDROPEROXIDE (W) LYASE) OR HL OR HPL)
 FILE 'CAPLUS, BIOSIS, SCISEARCH, USPATFULL, MEDLINE, EMBASE, TOXCENTER,
 PASCAL, BIOTECHNO, ESBIODBASE, LIFESCI' ENTERED AT 12:28:04 ON 11 AUG 2005
 L2 153052 S L1
 L3 16934 S (GENE# OR SEQUENCE# OR CLONE# OR POLYNUCLEOTIDE# OR RECOMBINA
 L4 373 S LYASE (S) L3
 L5 120 S PLANT# (S) L4
 L6 5 S WATERMELON# (S) L5
 L7 3 S (EXPRESS? (S) HOST)(S) L5
 L8 13 S COLI (S) L5

=> log y

STN INTERNATIONAL LOGOFF AT 12:36:48 ON 11 AUG 2005